XR-2590

SERVICE MANUAL

US Model
Canadian Model

Model Name Using Similar Mechanism	XR-2500
Tape Transport Mechanism Type	MG-36ASH-32

SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
7 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other Specifications

Power amplifier section

Outputs: Speaker outputs (sure seal connectors)
Speaker impedance: 4 – 8 ohms
Maximum power output: 20 W × 4 (at 4 ohms)

Cassette player section

Tape track: 4-track 2-channel stereo
Frequency response: 40 – 15,000 Hz
Signal-to-noise ratio

Cassette type	Dolby B	Dolby off
TYPE II, IV	66 dB	58 dB
TYPE I	63 dB	55 dB

Wow and flutter: 0.13 % (WRMS)

Tuner section

FM
Tuning range: 87.5 – 107.9 MHz
Antenna terminal: External antenna connector
Intermediate frequency: 10.7 MHz
Usable sensitivity: 13 dBf (75 ohms)
Selectivity: 70 dB at 400 kHz
Signal-to-noise ratio: 65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz: 0.9% (stereo), 0.5% (mono)
Separation: 33 dB at 1 kHz
Frequency response: 30 – 15,000 Hz
Capture ratio: 2 dB

AM
Tuning range: 530 – 1,710 kHz
Antenna terminal: External antenna connector
Intermediate frequency: 450 kHz
Sensitivity: 32 µV

General

Power requirements: 12 V DC car battery (negative ground)
Output lead: Power antenna relay control lead
Tone controls: Bass ± 8 dB at 100 Hz
Treble ± 8 dB at 10 kHz
Loudness: + 10 dB at 100 Hz
Mounting dimensions: Approx. 178 × 50 × 140 mm (w/h/d) (7 1/8 × 2 × 5 5/8 in.), not incl. projecting parts and controls
Mass: Approx. 1.2 kg (2 lb. 10 oz.)
Accessories supplied: Mounting hardware (1 set)
Power connecting cord (1)

Design and specifications subject to change without notice.

FM/AM CASSETTE CAR STEREO

SONY®

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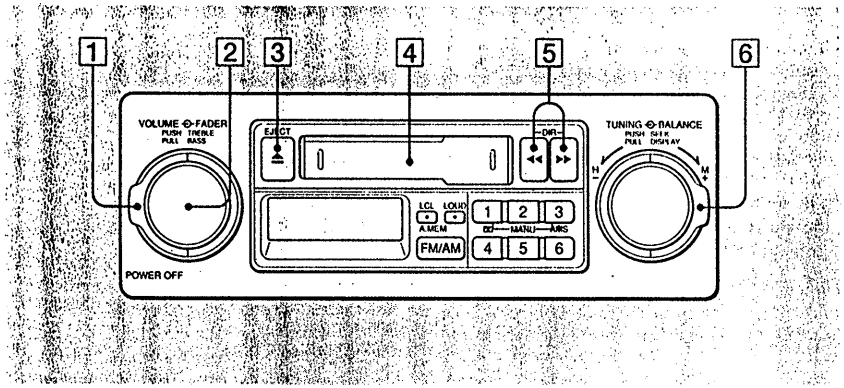
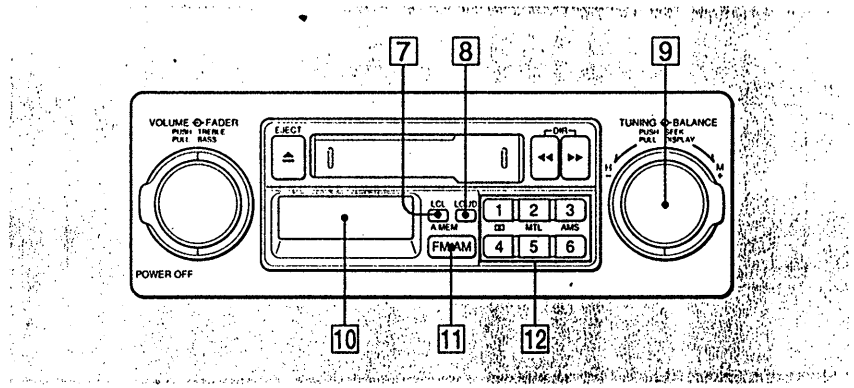
Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

Location and Function of Controls





Refer to the pages in ● for details.

1 FADER control

Turn clockwise to decrease the volume of the rear speakers or counterclockwise to decrease the volume of the front speakers.

2 POWER OFF (power on/off) switch/VOLUME/PUSH TREBLE/PULL BASS control

POWER OFF switch	Turn clockwise to turn on the unit and counterclockwise to turn off.
VOLUME control	Turn clockwise to increase volume and counterclockwise to decrease.
PUSH TREBLE control	Turn to adjust treble while pressing.
PULL BASS control	Turn to adjust bass while pulling.

3 EJECT button

Press to stop the tape and take out the cassette.

4 Cassette insertion door

5 ◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons ❼

During playback, press ◀◀ or ▶▶ for fast winding, or press both ◀◀ and ▶▶ simultaneously to listen to the other side of the cassette.

To Wind the Tape Rapidly

Direction indicator	To advance	To rewind
►	Press ▶▶.	Press ◀◀.
◄	Press ◀◀.	Press ▶▶.

To resume playback, press ◀◀ or ▶▶ (that one which is not depressed) lightly.

6 BALANCE control

Turn to adjust the balance of the left and right speakers.

7 LCL (local)/A.MEM (automatic memory) button ❽❾

LCL button	Press to eliminate interference from adjacent stations during reception of a station with comparatively strong broadcasting signals. To go back to the normal receiving sensitivity, press it again.
A.MEM button	Press for more than two seconds to memorize the stations automatically.

8 LOUD (loudness) button

Press to reinforce bass especially when listening at low volume.
To disengage the button, press it again.

9 TUNING/PUSH SEEK/PULL DISPLAY knob ❽ Use this knob also for clock setting. ❻

TUNING knob	Turn to normally tune in the desired station.
PUSH SEEK knob	Press for automatic tuning.
PULL DISPLAY knob	Pull to display the time indication during radio reception.

10 Display window

11 FM/AM (band select) button ❽❾

Each time you press the button, the band changes as follows:

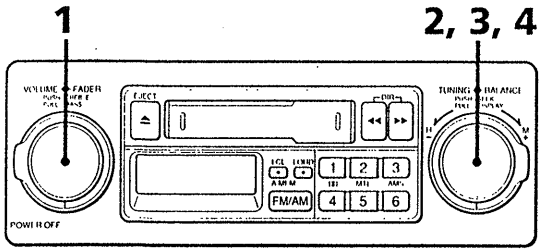
→ FM1 → FM2 → AM →

12 Preset number buttons ❼❿

	During tape playback	During radio reception
1	DD (Dolby noise reduction) button Select the same Dolby NR system used for the recorded cassette.	Preset number buttons
2	MTL (metal/CrO2) button "MTL" indication appears on the display window. To listen to the normal (TYPE I) tapes, press it again.	
3	AMS (automatic music sensor) button ❼	
4 – 6	–	

This section is extracted from instruction manual.

Setting the Clock

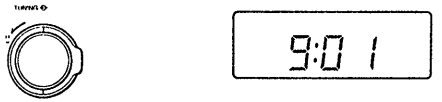


The clock has a 12-hour digital indication.

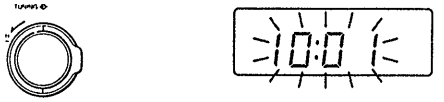
For example, to set it to 10:08.

1 Turn clockwise to turn the power on.

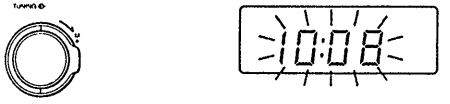
2 Pull out the DISPLAY knob to display the time digits.



3 Turn to "H" while pulling out the TUNING knob.
Set the hour digits.



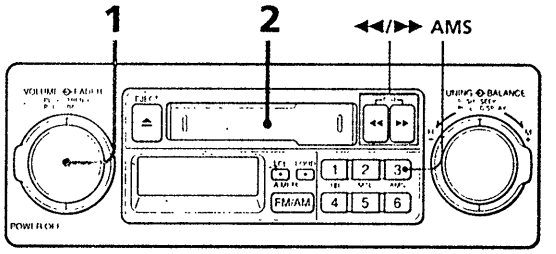
4 Turn to "M" while pulling out the TUNING knob.
Set the minute digits.



The digits will advance in sequence. To advance them rapidly, keep the TUNING knob turned while pulling it out.

When you set minute digits
"00" comes after "59". Setting the hour digits will not affect the minute digits.

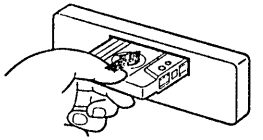
Listening to the Tape Playback



Before inserting a cassette, take up any slack in the tape with a thick pencil.

1 Turn clockwise to turn the power on.

2 Insert a cassette.
Playback starts automatically.



To listen to the reverse side of the cassette,

press ◀◀ ▶▶ simultaneously.

Locating the Beginning of a Track
— AMS function

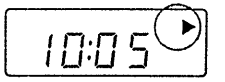
1 Press 3 AMS.
2 Press ◀◀ or ▶▶, referring to the following table.

Indicator	Cassette side being played	Desired track	
		Next track	Current track
▶	Side facing upwards	Press ▶▶.	Press ◀◀.
◀	Side facing downwards	Press ◀◀.	Press ▶▶.

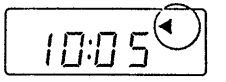
The desired track may not be located if ...
— there is a noise in the space between tracks.
— the space is less than four seconds long.
— the ◀◀ or ▶▶ button is pressed immediately before or after the desired track, or with in the blank space.

Note
Before turning off the unit; eject the tape to avoid tape damage.

Tape transport direction indication.



The side facing up is being played back.

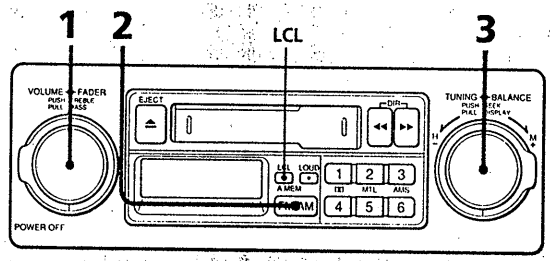


The side facing down is being played back.

To stop the tape playback and listen to the radio
Press the EJECT button. The unit enters the radio mode.

Playback may begin in the middle of the track when AMS is activated, as the followings are treated as blanks:
— a long pause in the track
— a passage of low frequencies or very low volume
— gradual increase or decrease of volume, as in some classical music.

Tuning in a Station



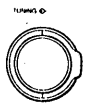
Searching for the Stations Automatically — Automatic Tuning

1 Turn clockwise to turn the power on.

2 Press to select the desired band, FM1, FM2, or AM.

FM/AM

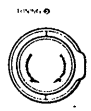
3 Press the PUSH SEEK button.
Stations will be scanned automatically and scanning will stop when a station is tuned in. Repeat pressing the PUSH SEEK button until the desired station is tuned in.



Tuning in by Adjusting the Frequency — Manual Tuning

1 Press to select the desired band. FM1, FM2, or AM.

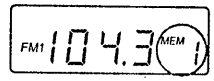
2 Turn to tune in the desired station.



PREVENTING ACCIDENTS!

While you are driving, the use of Automatic Tuning and the Memory Preset Tuning is recommended instead of the Manual Tuning.

When an FM stereo program with a sufficient signal strength is tuned in

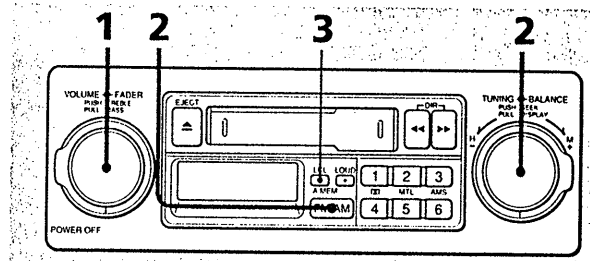


The "ST" indication appears.

To play back a cassette during radio reception
Insert a cassette. The radio will be turned off and playback will start automatically.

When there are too many stations and the scanning stops too frequently during the automatic tuning
Press the LCL button lightly to get the "LCL" indication. The mode changes to the local seek mode where only the stations with relatively strong signals are turned in. It functions only when the Automatic Tuning is in operation.

Using the Memory Preset Tuning



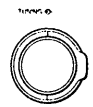
You can memorize a total of 18 stations (6 stations for each band), one on each preset number button in any order.

Memorizing the Stations Automatically — Automatic Memory Function

1 Turn clockwise to turn the power on.

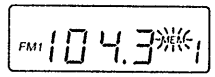
2 Tune in a desired station
using automatic or manual tuning (see page 8).

FM/AM



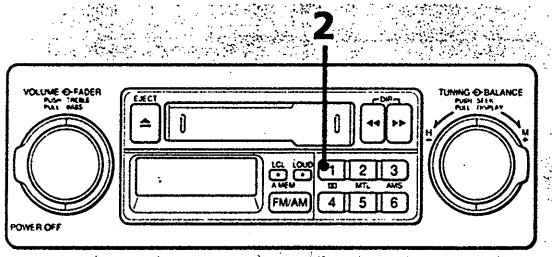
3 Press the A.MEM button for more than two seconds.

A.MEM



The unit will start scanning the selected band and memorizes the tuned stations on the preset number buttons 1 through 6 automatically.

Using the Memory Preset Tuning



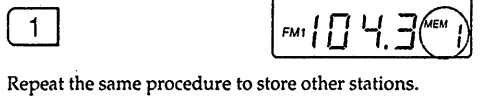
Up to 6 stations on each band (FM1, FM2, and AM) can be stored on the preset number buttons in order of your choice.

Memorizing Only the Desired Stations

For example, store a station on the preset number button 1.

1 **Tune in a desired station**
using automatic or manual tuning (page 8).

2 **Keep the preset number button pressed for about two seconds until the "MEM" indication comes on in the display window.**



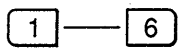
Repeat the same procedure to store other stations.

Only one station per band (FM1, FM2, and AM) can be stored in the memory on each preset number button.
If you try to store another station on the same preset number button, the previously stored station will be erased.

When the "MEM" indication comes on, the station is stored in the memory and the operation is completed. The "MEM" indication goes off after a while.

Receiving the Memorized Stations

Select the desired band. Press the desired preset number button lightly.



Note
If you keep pressing the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only lightly.

Connections/Connexions

Cautions

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

Attention

- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les raccordements, débranchez la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Raccordez les fils **jaune** et **rouge** d'alimentation uniquement après avoir réalisé toutes les autres connexions.
- Raccordez le fil d'alimentation rouge à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoire.
- **Rassemblez tous les fils de terre en un point de masse commun.**

Speaker Connection

Notes on speaker connection

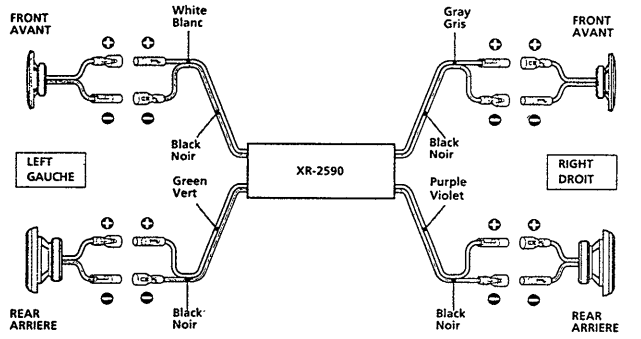
- Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.
- Do not attempt to connect the speakers in parallel.

Connexion des haut-parleurs

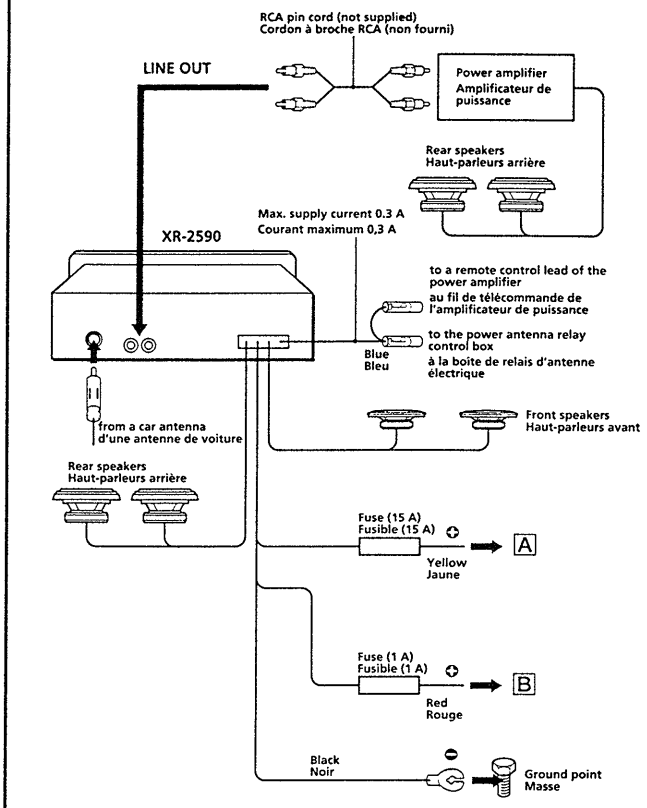
Remarques sur la connexion des haut-parleurs

- Utiliser des haut-parleurs avec une impédance de 4 à 8 ohms et qui peuvent supporter l'alimentation fournie sinon ils risquent d'être endommagés.
- Ne pas connecter les bornes du système de haut-parleur au châssis de la voiture et ne pas raccorder les bornes du haut-parleur droit aux bornes du haut-parleur gauche.
- Ne pas essayer de connecter les haut-parleurs en parallèle.

Speaker connection
Connexions de haut-parleurs



Connection Diagram — Schéma de connexion



Destination

A To the +12 V terminal which is energized at all times
B To the +12 V power terminal which is energized with the ignition key in the accessory position

Cord color

Red	Power input lead
Yellow	Power input lead
Blue	Power antenna relay control lead/Power amplifier control lead
Black	Ground wire

A raccorder:

A A la borne d'alimentation 12 volts positive qui est continuellement énergétisée
B A la borne d'alimentation 12 volts positive qui est énergétisée lorsque la clé de contact est sur la position accessoires

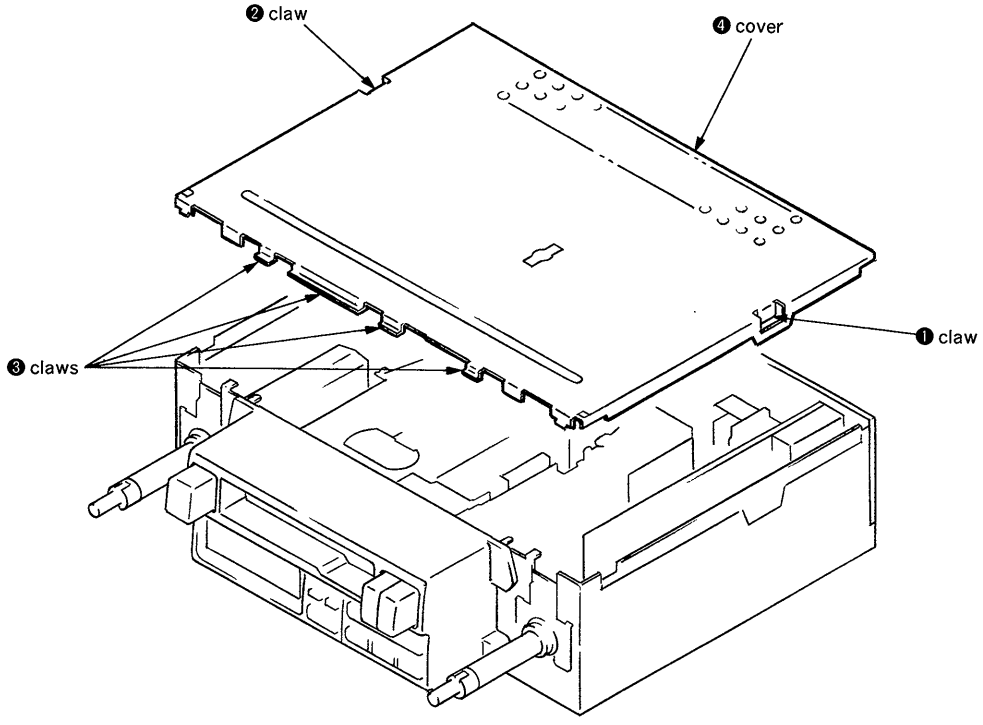
Couleur des fil

Rouge	Fil d'entrée d'alimentation
Jaune	Fil d'entrée d'alimentation
Bleu	Fil de contrôle de relais d'antenne électrique/fil de télécommande de l'amplificateur
Noir	Fil de masse

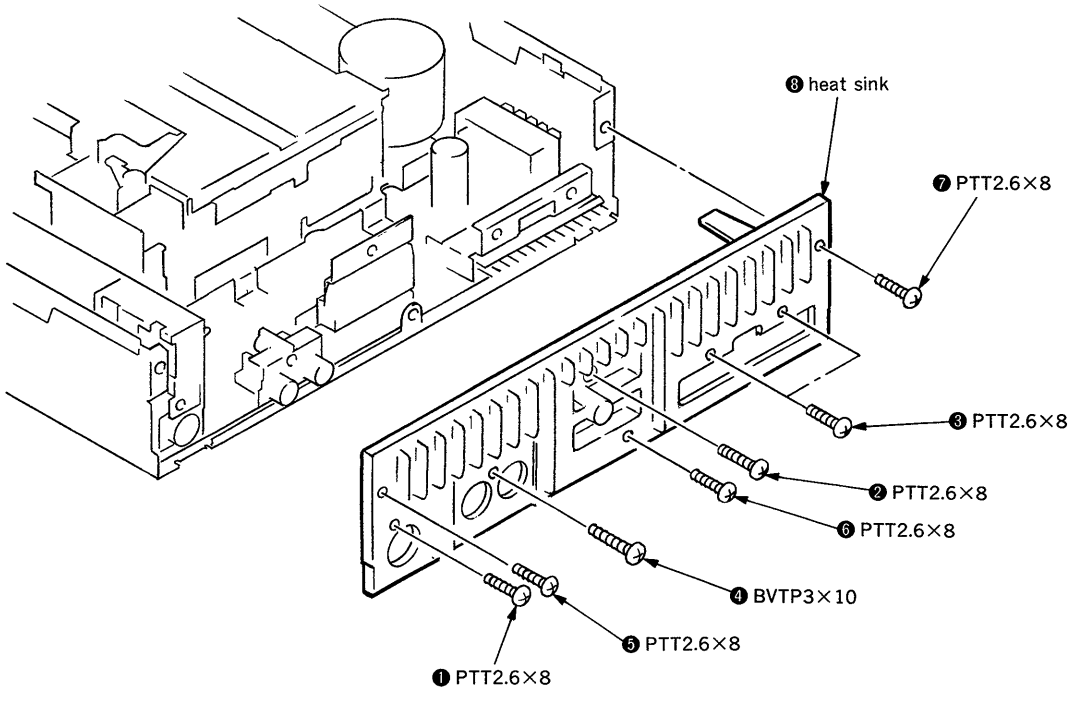
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

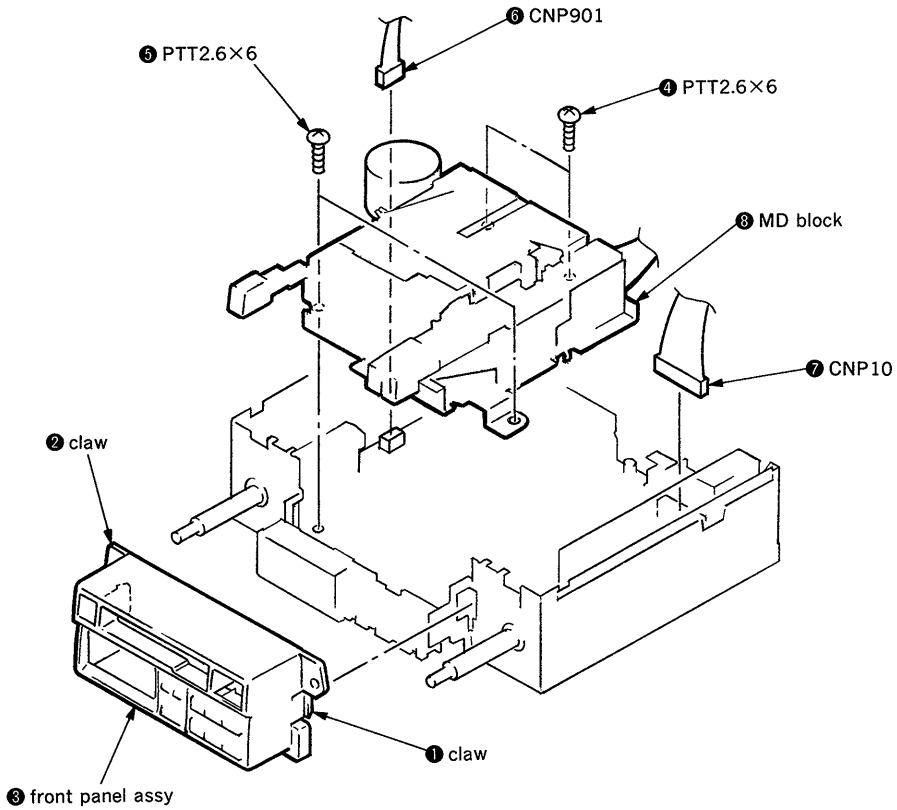
2-1. COVER



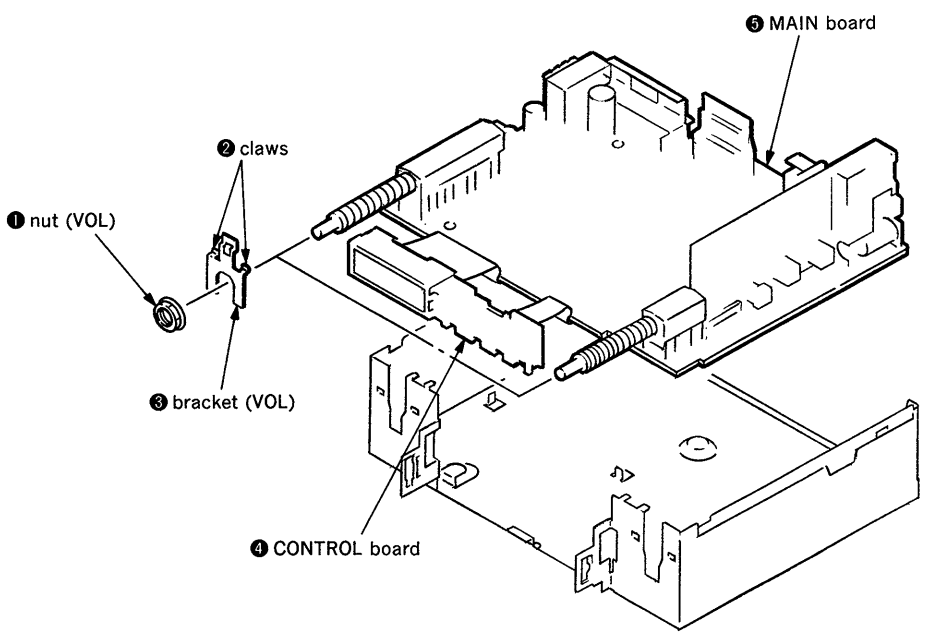
2-2. HEAT SINK



2-3. MD BLOCK



2-4. MAIN BOARD



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	25−55g•cm (0.35−0.76 oz•inch)
FWD Back Tension		1.5−4.0g•cm (0.02−0.05 oz•inch)
REV	CQ-102RC	25−55g•cm (0.35−0.76 oz•inch)
REV Back Tension		1.5−4.0g•cm (0.02−0.05 oz•inch)
FF, REV	CQ-201B	more than 50g•cm (more than 0.70oz•inch)

SECTION 4
ELECTRICAL ADJUSTMENTS

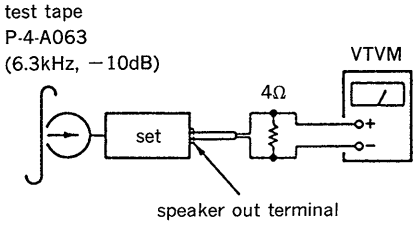
See the adjustment location from on page 14 and 15 for the adjustment.

DECK SECTION　**0dB=0.775V**

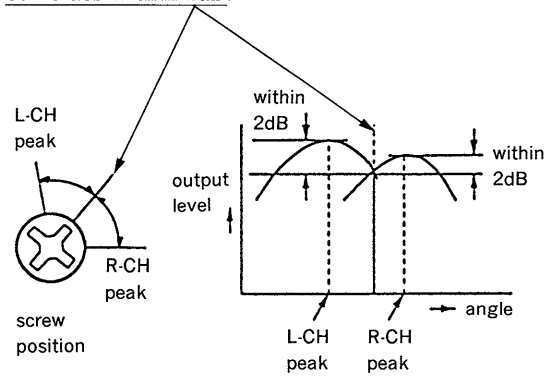
PB Head Azimuth Adjustment

Procedure:

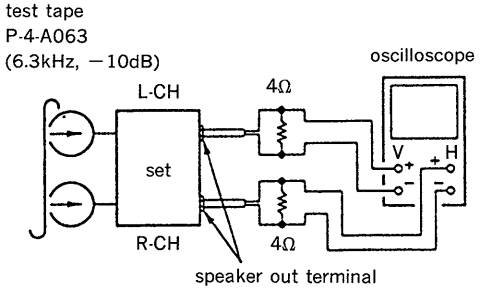
1. Put the set into the FWD PB mode.

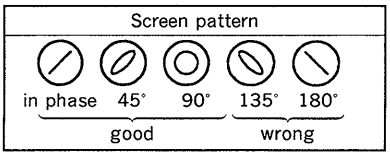


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2dB.



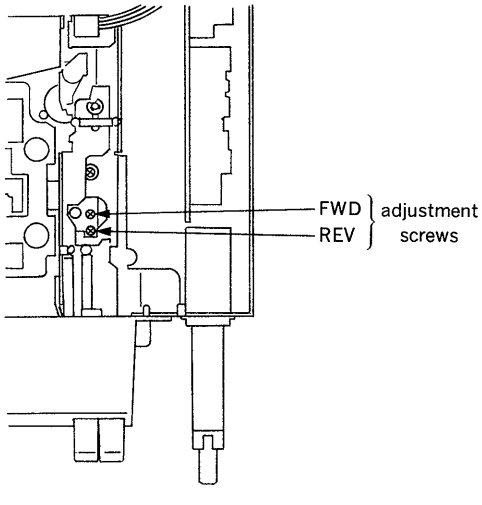
3. Check the phase in the PB mode.





4. Repeat the above adjustment for the REV PB mode.

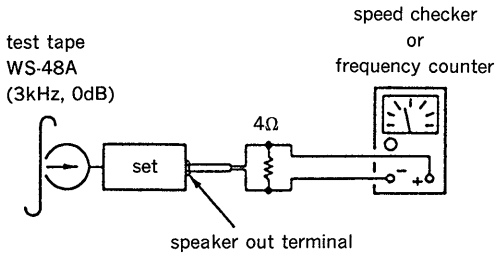
Adjustment Location: PB head



Tape Speed Adjustment

Procedure :

1. Put the set into the FWD PB mode.



Specification : Constant speed

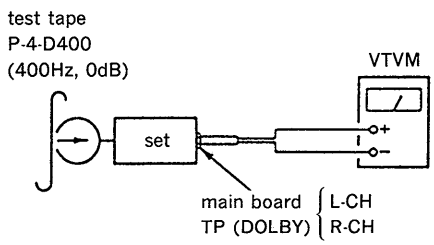
Speed checker	Frequency counter
−1.5 to +2.5%	2,955 to 3,075Hz

Adjustment Location : capstan motor volume

DOLBY Level Adjustment

Setting :

1 (DOLBY NR) switch : OFF
FADER control : mechanical center
VOLUME control : maximum
PUSH TREBLE control : mechanical center
PULL BASS control : mechanical center
BALANCE control : mechanical center

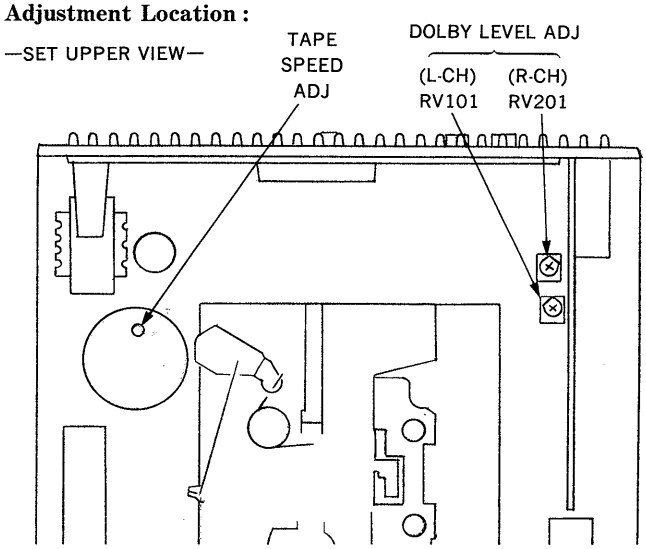


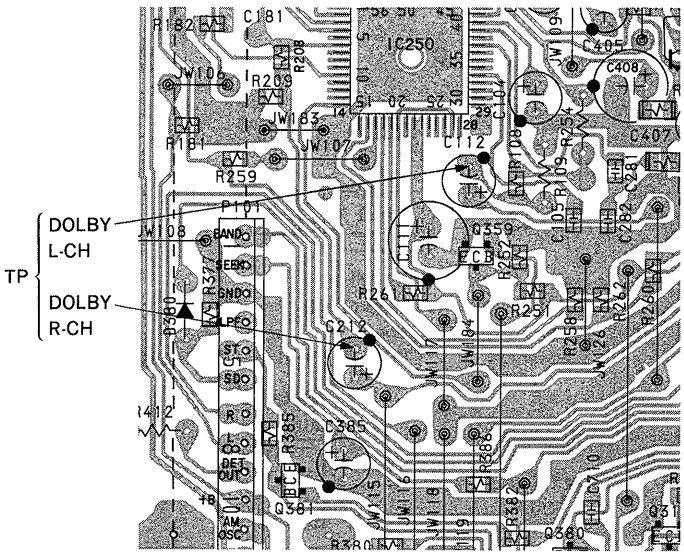
Procedure :

1. Put the set into the FWD PB mode.
2. Adjust RV101 (L-CH) and RV201 (R-CH) so that VTVM reading is −6±1 dB (0.35 to 0.44V).

Adjustment Location : main board

Adjustment Location :





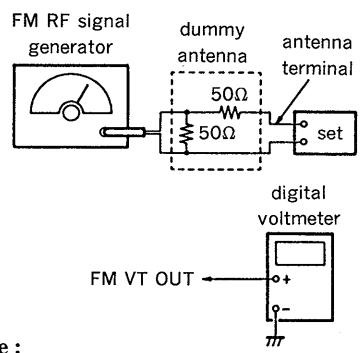
TUNER SECTION **0dB=1μV**

Cautions during repair
When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

FM VT Voltage Adjustment

Setting :

FM/AM button : FM



Procedure :

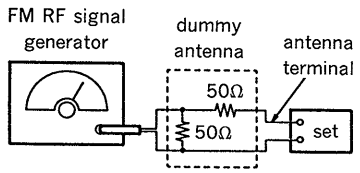
Adjust for the following value reading on digital voltmeter.		
Frequency Display	87.5MHz	107.9MHz
Reading on Digital voltmeter	1.42±0.05V	7.2±0.5V
Adjustment Part	T4	(confirmation)

Adjustment Location : See page 14 and 15.

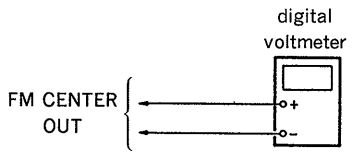
FM Center Adjustment

Setting :

FM/AM button : FM

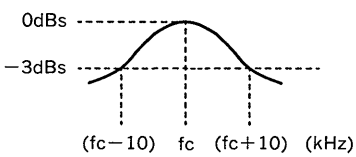


Carrier frequency : 98.1MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation (100%)



Procedure :

1. Adjust T5 on TU1 so that the reading on the digital voltmeter becomes in 0±20mV.
2. Output an Fcenter 60dB signal output from FM RF signal generator so that the speaker output terminal is 0dBs.
3. Change the FM RF signal generator frequency and check the deviation of the frequency on +side and −side when the speaker output terminal drops 3dB. (Both +side and −side is approx. 50kHz.)
4. Re-adjust T2 on TU1 when the difference deviation of the frequency does more than 10kHz.

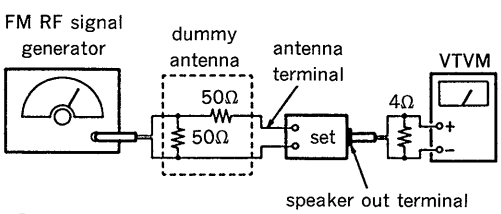


Adjustment Location : See page 14 and 15.

FM SENS/IF Adjustment

Setting

FM/AM button : FM



Procedure :

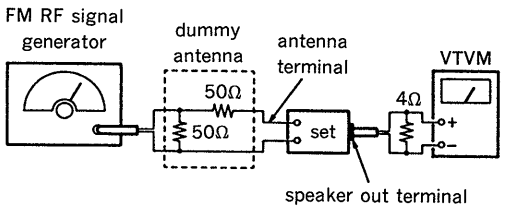
Adjust for a maximum reading on VTVM.
T1-T3
87.5MHz

Adjustment Location : See page 14.

FM High Cut Control Adjustment

Setting :

FM/AM button : FM



Carrier frequency : 98.1MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 40kHz deviation

Procedure :

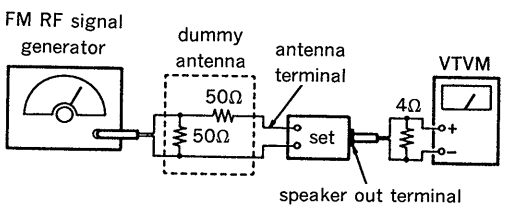
1. Tune the 98.1MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV1 on TU1 so that the output level is (A) −6dB then signal generator input set to 20dB.

Adjustment Location : See page 14.

FM Stereo Separation Adjustment

Setting :

FM/AM button : FM



Carrier frequency : 98.1MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : 1kHz, 75kHz deviation (100%) (L-CH only)

Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV2 on TU1 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ

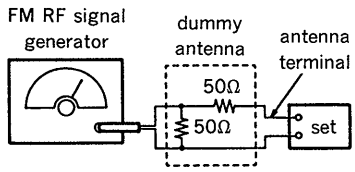
Specification : Separation more than 23dB

Adjustment Location : See page 14.

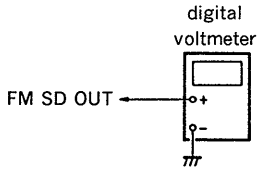
FM Auto Scan/Stop Level Adjustment

Setting :

FM/AM button : FM



Carrier frequency : 98.1MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 22.5kHz deviation (30%)



Procedure :

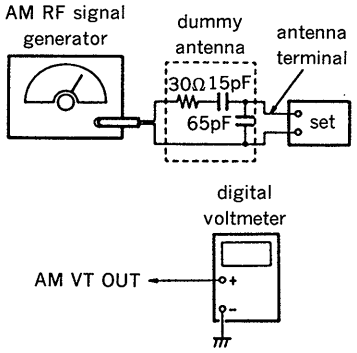
1. Adjust RV3 on TU1 so that the reading on the digital voltmeter changes point from minimum to maximum. (approx. 0.6V)
2. Confirm that the set stops auto-scanning with FM RF signal generator output level set at 22±2dB.

Adjustment Location : See page 14 and 15.

AM VT Adjustment

Setting :

FM/AM button : AM



Procedure :

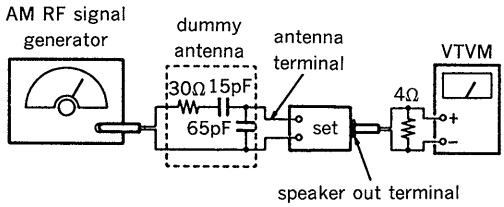
Adjust for the following value reading on digital voltmeter.		
Frequency Display	530kHz	1,710Hz
Reading on Digital voltmeter	1.42±0.05V	6.8±0.5V
Adjustment Part	T9	(confirmation)

Adjustment Location : See page 14 and 15.

AM IF Adjustment

Setting :

FM/AM buton : AM



Procedure :

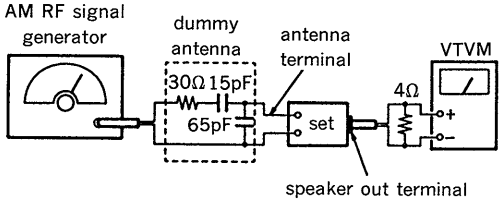
Adjust for a maximum reading on VTVM.
T8
450kHz

Adjustment Location : See page 14.

AM ANT Adjustment

Setting :

FM/AM button : AM



Procedure :

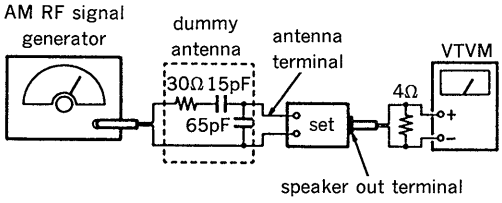
Adjust for a maximum reading on VTVM.
T6
600kHz

Adjustment Location : See page 14.

AM SENS Adjustment

Setting :

FM/AM button : AM



Procedure :

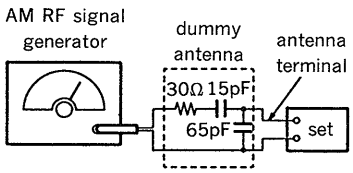
Adjust for a maximum reading on VTVM.	
T7	C91
530kHz	1,710kHz

Adjustment Location : See page 14.

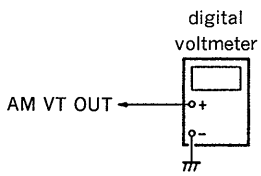
AM Auto Scan/Stop Level Adjustment

Setting :

FM/AM button : AM



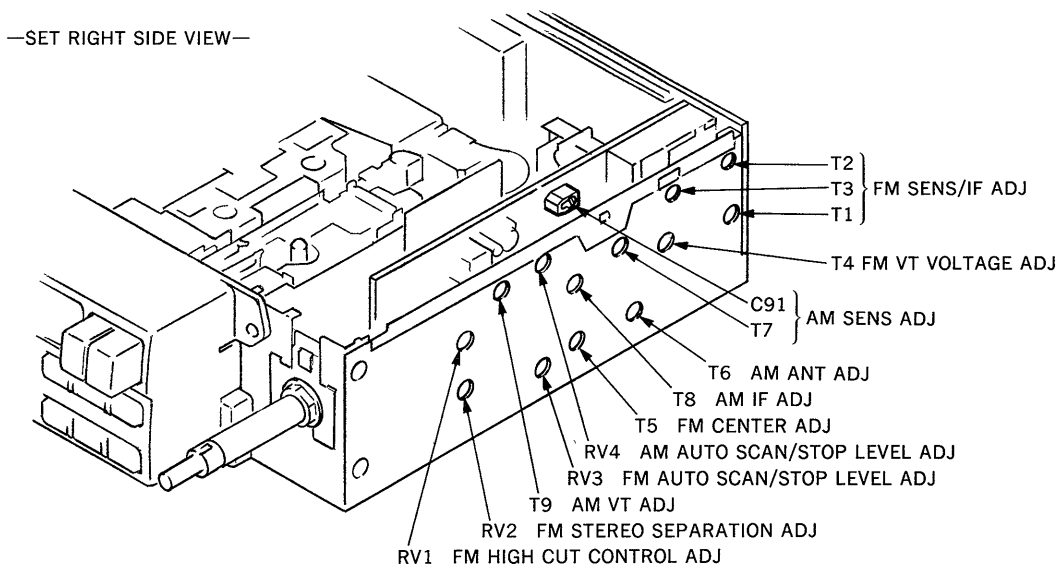
Carrier frequency : 1000kHz
30%amplitude modulation by 400Hz signal
Output level : 30dB (31.6μV)



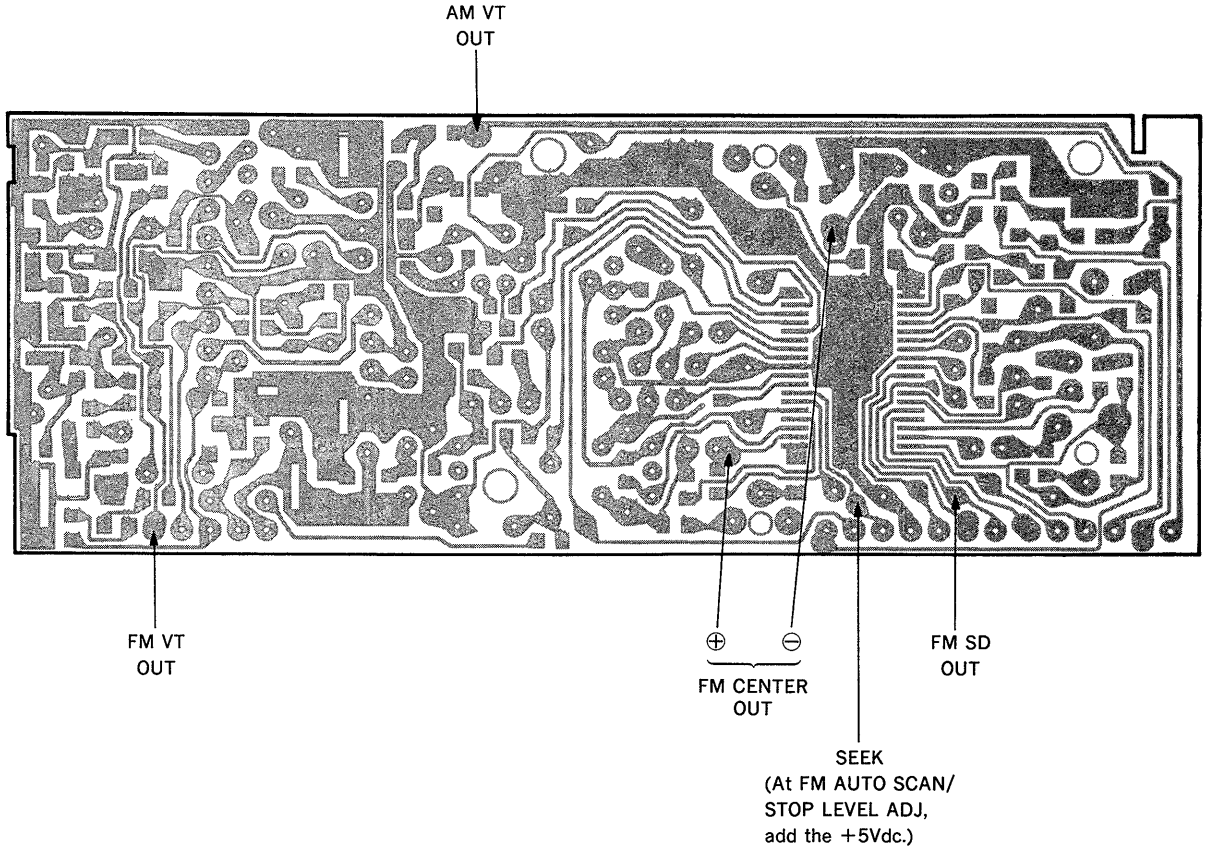
Procedure :

1. Adjust RV4 on TU1 so that the reading on the digital voltmeter changes point from minimum to maximum. (approx. 0.6V)
2. Confirm that the set stops auto-scanning with AM RF signal generator output level set at 33±2dB.

Adjustment Location : See page 15.



Measurement Point Location : tuner unit (TU1)—conductor side—



SECTION 5
DIAGRAMS

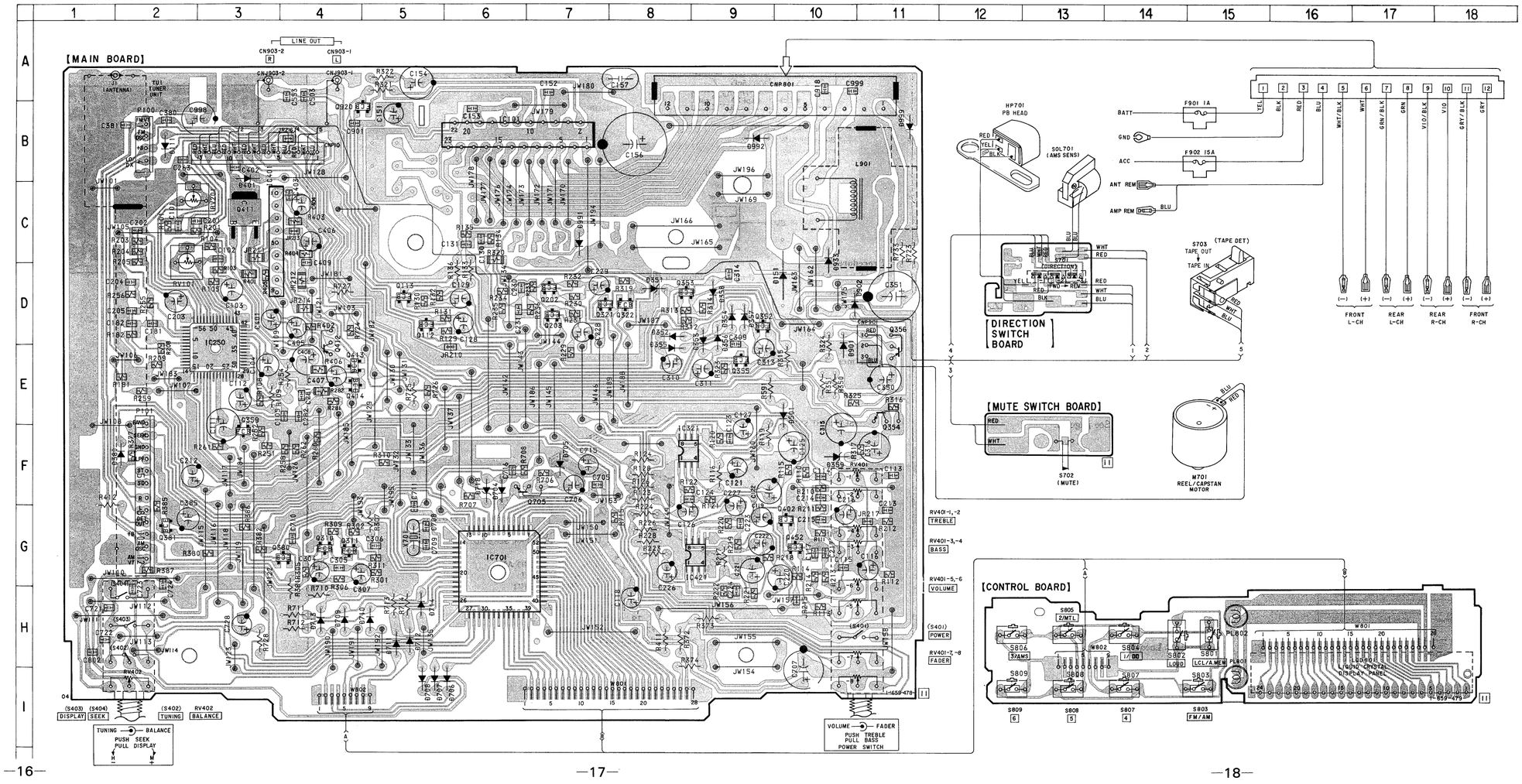
5-1. PRINTED WIRING BOARDS

• Semiconductor Location

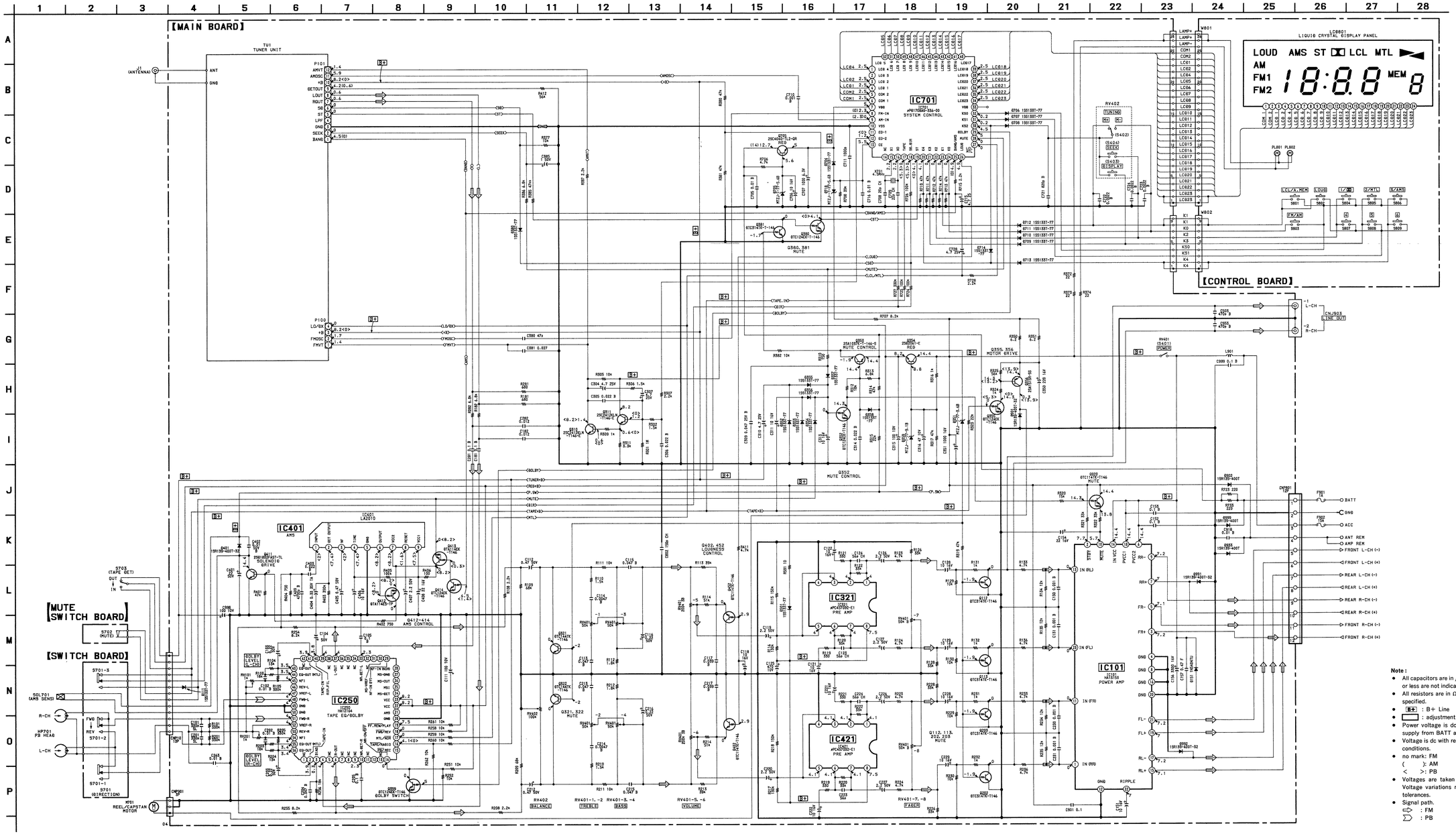
Ref. No.	Location	Ref. No.	Location
D111	B-2	IC101	B-6
D151	D-10	IC250	D-3
D351	D-8	IC321	F-8
D352	D-8	IC401	C-3
D353	D-9	IC421	G-8
D354	D-9	IC701	G-6
D355	D-8		
D356	D-9	Q112	D-5
D357	D-9	Q113	D-5
D358	D-9	Q202	D-7
D359	F-10	Q203	D-7
D380	F-2	Q310	G-4
D401	C-3	Q311	G-4
D501	E-10	Q321	D-7
D704	F-6	Q322	D-8
D705	F-7	Q352	D-9
D706	I-6	Q353	D-8
D707	I-5	Q354	E-11
D708	I-5	Q355	E-9
D709	H-4	Q356	D-11
D710	H-5	Q359	F-3
D711	H-5	Q380	G-4
D712	H-5	Q381	G-2
D713	H-4	Q402	G-10
D714	H-5	Q411	C-3
D718	F-6	Q412	D-4
D901	E-10	Q413	E-4
D902	D-10	Q414	E-4
D933	C-10	Q452	G-10
D991	C-7	Q705	F-7
D992	B-9	Q920	B-4
D999	B-11		

Note :

- ○— : parts extracted from the component side.



5-2. SCHEMATIC DIAGRAM • Refer to page 23 for IC Block Diagrams.

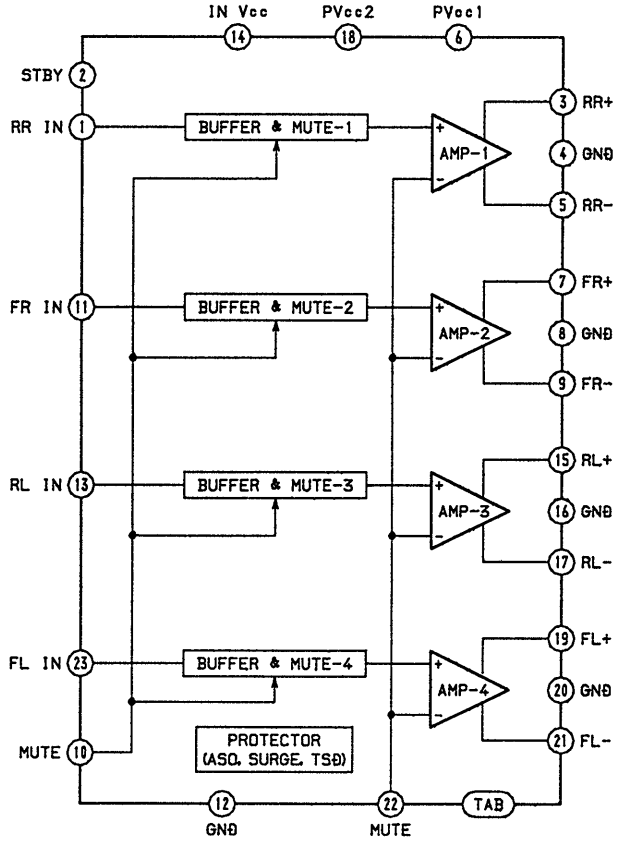


Note :

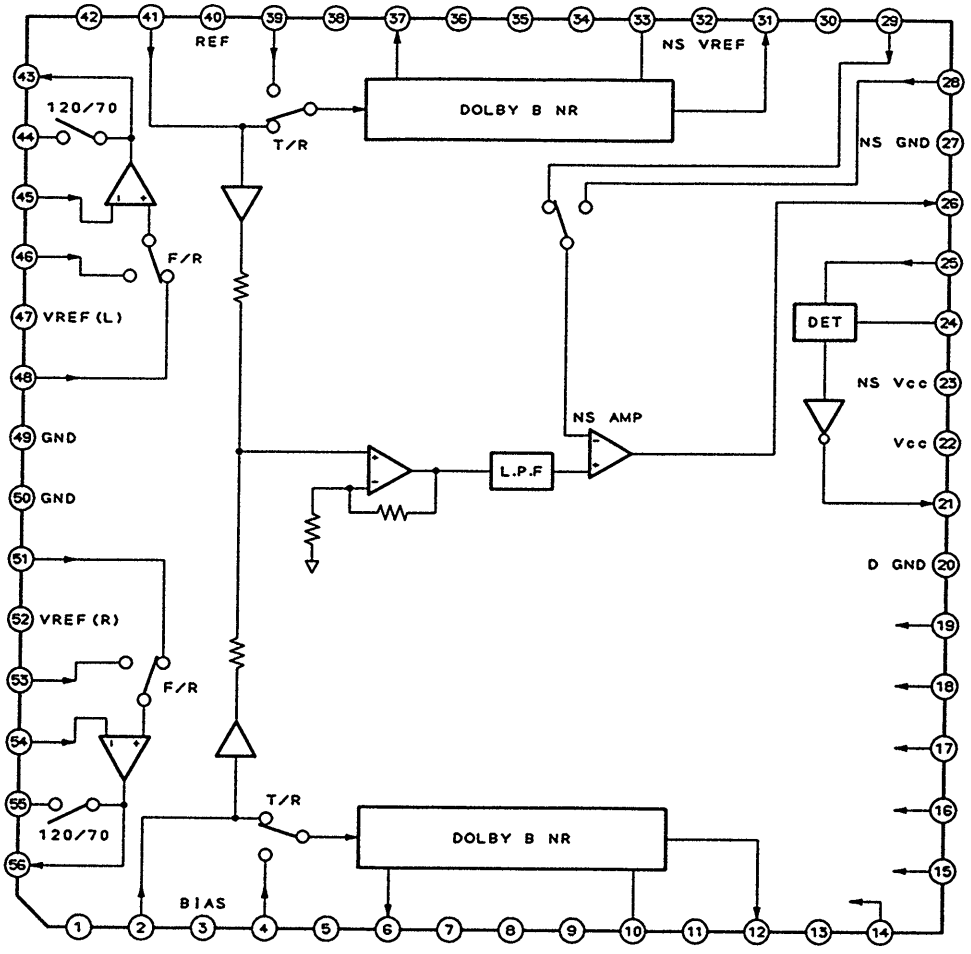
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- 【+】 : B+ Line
- [ ] : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): AM
  < >: PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB

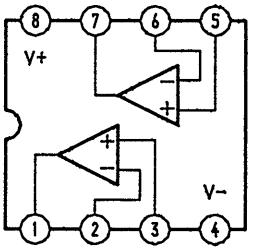
• IC Block Diagrams

IC101 HA13153

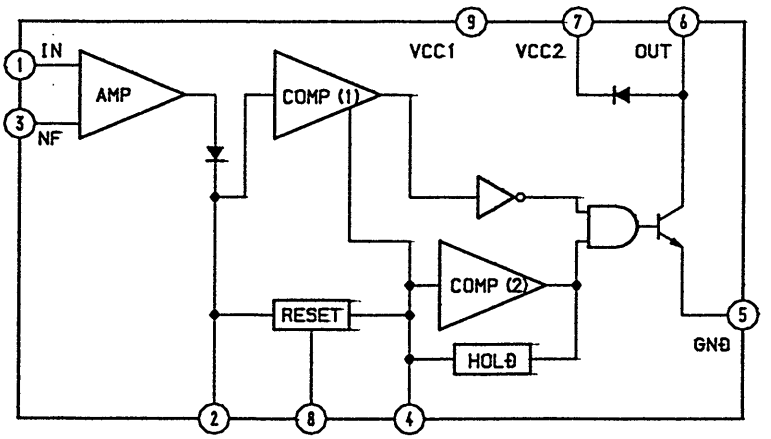


IC250 HA12164





IC401 LA2010

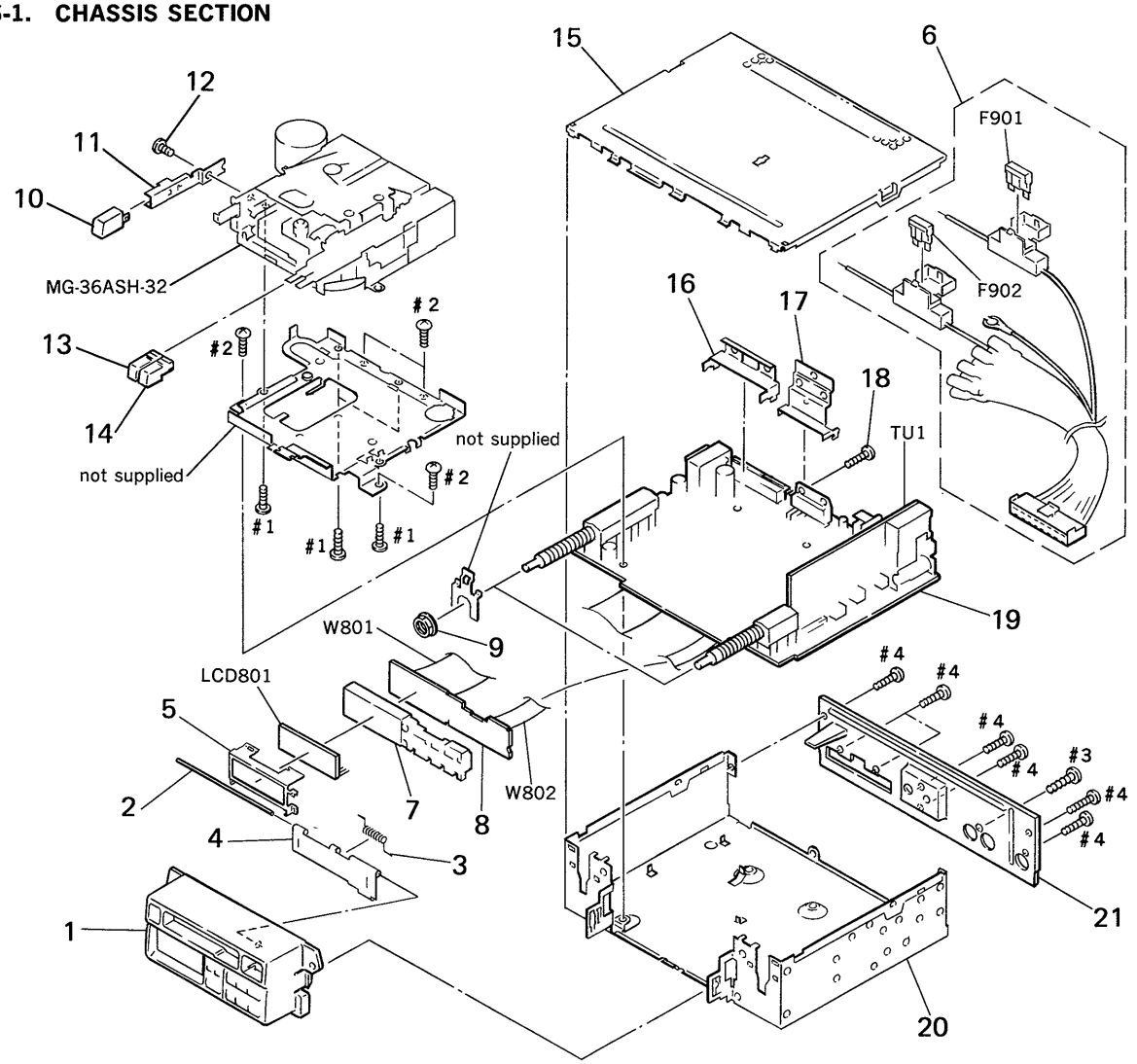


SECTION 6
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

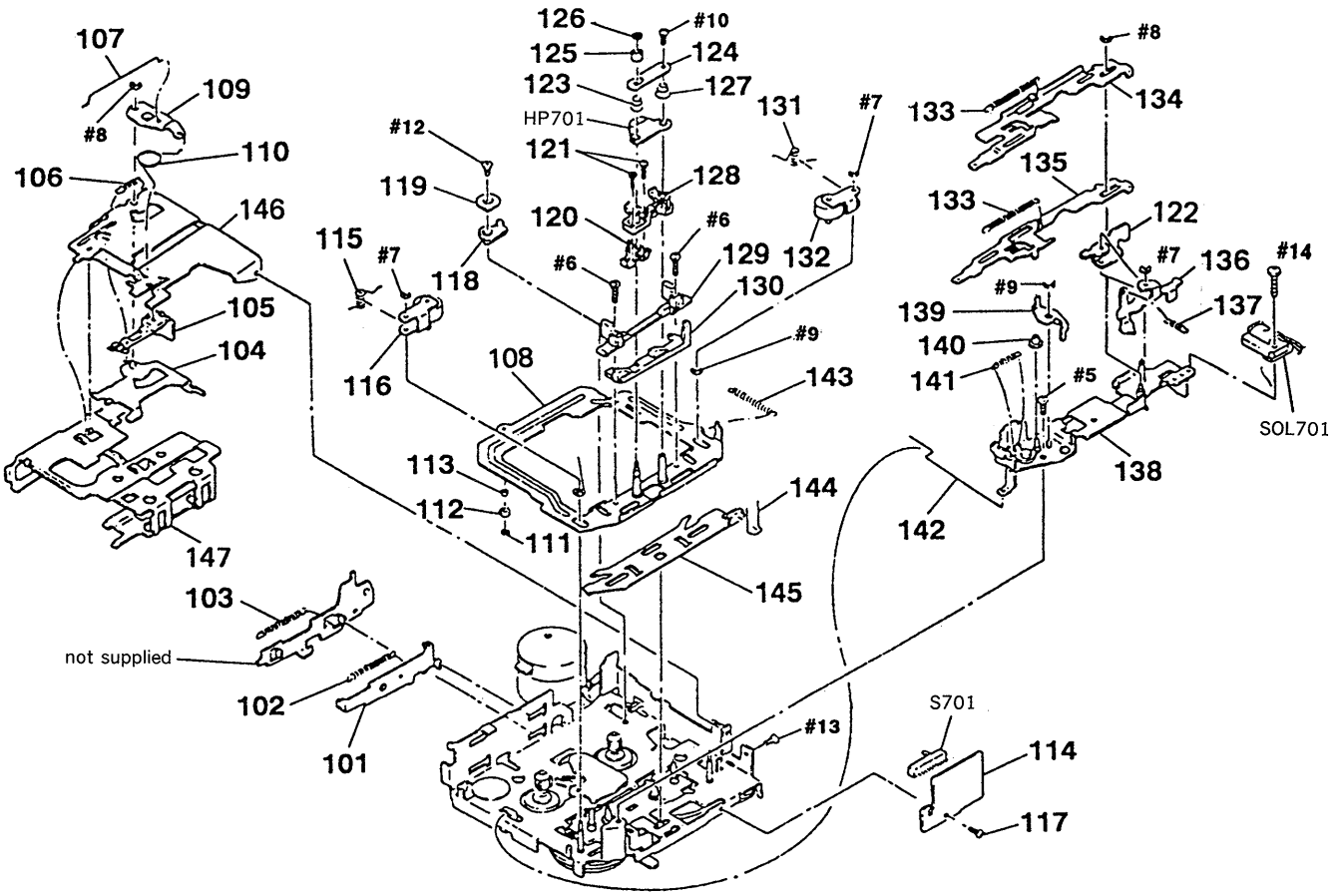
6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	X-3371-526-1	PANEL SUB ASSY, FRONT	
2	3-332-130-01	SHAFT, C DOOR	
3	3-559-944-00	SPRING	
4	3-912-312-41	DOOR, CASSETTE	
* 5	3-911-290-11	BRACKET (LCD)	
6	1-776-855-11	CORD (WITH CONNECTOR)	
* 7	3-935-089-01	PLATE, LIGHT GUIDE	
* 8	1-659-479-11	CONTROL BOARD	
9	3-575-039-02	NUT (VOL)	
10	3-373-631-01	BUTTON (EJECT)	
11	3-392-429-01	LEVER (EJECT)	
12	3-372-033-11	SCREW (2.6X3), +P	
13	3-373-632-01	BUTTON (REW)	
14	3-373-633-01	BUTTON (FF)	

Ref. No.	Part No.	Description	Remark
* 15	3-931-292-01	COVER	
* 16	3-931-296-01	BRACKET (CONNECTOR)	
* 17	3-920-526-01	BRACKET (23P)	
18	3-922-535-01	SCREW (+BTT)	
* 19	A-3294-000-A	MAIN BOARD, COMPLETE	
* 20	3-931-293-01	CHASSIS (MAIN)	
* 21	3-931-294-01	HEAT SINK	
F901	1-532-798-11	FUSE (BLADE TYPE) (AUTO FUSE) 1A	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
LCD801	1-810-023-31	DISPLAY PANEL, LIQUID CRYSTAL	
TU1	A-3309-002-A	TUNER UNIT	
W801	1-751-021-21	CABLE, FLAT (28 CORE)	
W802	1-769-356-11	CABLE, FLAT 9P	

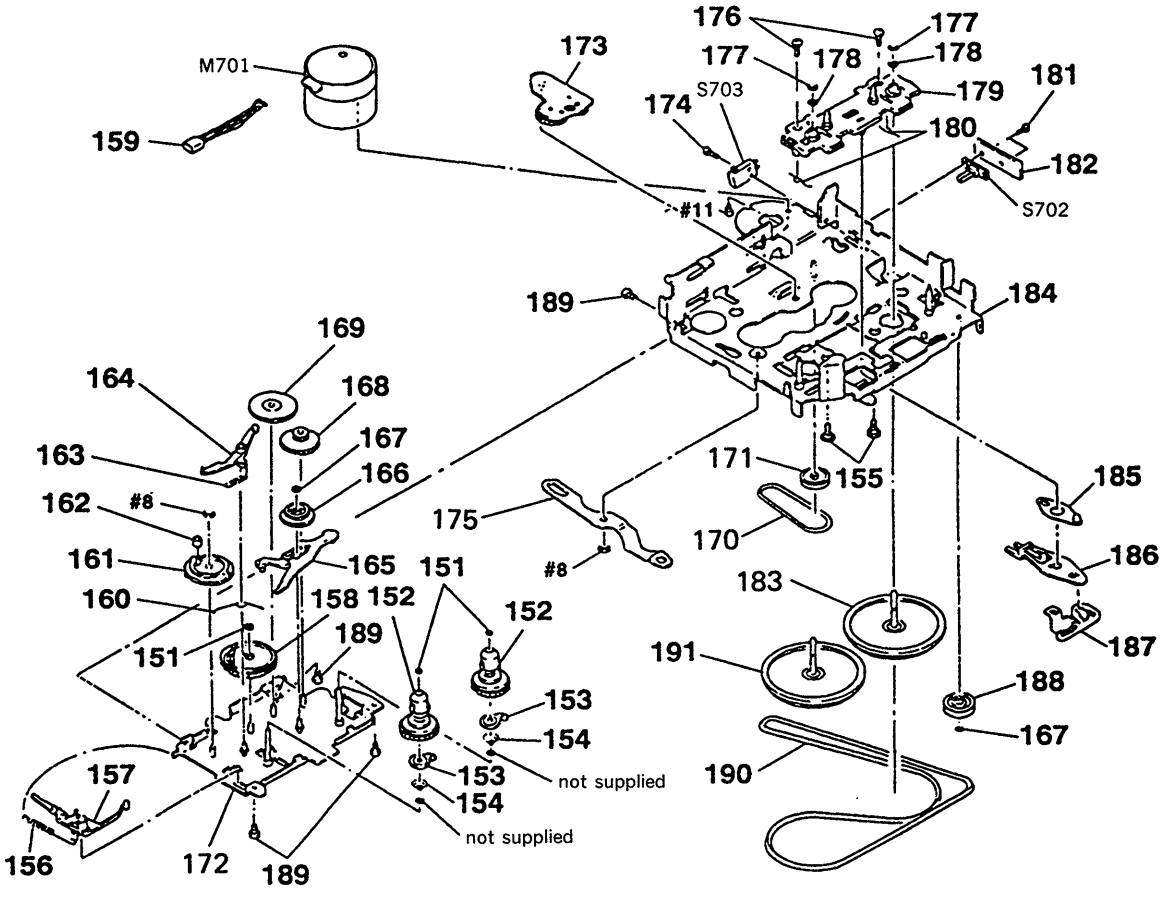
6-2. MECHANISM DECK SECTION 1 (MG-36ASH-32)



Ref. No.	Part No.	Description	Remark
* 101	3-392-978-01	LEVER, EJECT	
102	3-392-950-01	SPRING	
103	3-392-951-01	SPRING	
* 104	3-392-921-01	LOCK ASSY, EJECT CAM	
105	3-392-972-01	HOOKER, TAPE	
106	3-392-953-01	SPRING	
107	3-392-969-01	LINK, RETURN	
* 108	3-392-975-05	PLATE ASSY (S), HEAD	
* 109	3-392-932-01	PLATE, CENTER	
110	3-392-961-01	SPRING (B)	
111	3-570-615-00	POLY-WASHER (DIA. 1.2)	
112	3-392-945-01	ROLLER (A), H.P	
113	3-392-942-01	ROLLER (B), H.P	
114	3-392-970-01	CHASSIS, SWITCH	
115	3-392-958-01	SPRING (R)	
116	3-375-378-01	ARM (R) ASSY, PINCH	
* 117	4-908-792-11	SCREW (B2)	
118	3-372-244-01	ARM (N), MUTE	
* 119	3-397-427-01	COLLAR, MUTE ARM	
120	3-377-908-01	SHIM (X), ADJUSTOR	
121	3-375-379-01	SCREW, AZIMUTH	
122	3-392-903-01	ARM, RELEASE	
123	3-392-956-01	SPRING (A)	
* 124	3-392-930-01	RETAINER, SPRING	
125	3-392-943-01	ROLLER, FF	

Ref. No.	Part No.	Description	Remark
126	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
127	3-392-955-01	SPRING (A)	
* 128	3-379-142-01	ARM (B), ADJUSTOR	
129	3-392-984-02	GUIDE, TAPE	
130	3-377-909-02	LINK (X), ADJUSTOR	
131	3-392-957-01	SPRING (F)	
132	3-375-377-01	ARM (F) ASSY, PINCH	
133	3-392-948-01	SPRING	
* 134	3-392-906-01	LEVER (A), FF	
* 135	3-392-907-01	LEVER (A), REW	
* 136	3-392-904-01	ARM (A), LOCK	
137	3-392-902-01	SPRING (A)	
* 138	3-372-242-01	BRACKET ASSY (D), LEVER	
* 139	3-392-933-01	LEVER (B), CHANGE	
140	3-392-994-01	ROLLER, PROGRAM	
141	3-392-954-01	SPRING	
142	3-372-243-01	LINK (B), SELECTOR	
143	3-392-952-01	SPRING	
144	3-392-962-01	SPRING	
* 145	3-392-919-01	ARM ASSY, F, R SELECTION	
146	3-375-383-01	HANGER (X), CASSETTE	
147	3-375-384-01	HOLDER (X), CASSETTE	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	
SOL701	1-454-464-12	SOLENOID, PLUNGER	

6-3. MECHANISM DECK SECTION 2 (MG-36ASH-32)



Ref. No.	Part No.	Description	Remark
151	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
152	3-385-263-01	SPINDLE ASSY (D), REEL	
153	3-375-380-01	CAM ASSY, DETECTION	
154	3-370-619-01	SPRING, BACK TENSION	
155	3-392-918-01	SCREW, EJECT HOOK	
156	3-392-959-01	SPRING	
157	3-392-985-02	RATCHET	
158	3-392-990-01	GEAR, DETECTION	
* 159	3-376-195-01	CONNECTOR ASSY (3P)	
160	3-392-960-01	SPRING	
161	3-392-987-01	GEAR, SELECTOR	
162	3-392-944-01	COLLAR (SELECTOR GEAR)	
163	3-375-131-01	SPRING, GEAR LOCK ARM	
164	3-392-989-02	ARM, GEAR LOCK	
165	3-392-986-01	ARM, SENSOR	
166	3-392-915-01	GEAR, IDLE	
167	3-570-615-00	POLY-WASHER (DIA. 1.2)	
168	3-392-936-01	GEAR (A)	
169	3-392-937-01	GEAR (B)	
170	3-375-375-02	BELT (C), SUB	
171	3-392-938-01	GEAR, PULLY	
* 172	3-392-976-01	BASE ASSY, REEL	
173	3-392-916-01	ARM ASSY, TU GEAR	
174	3-318-203-11	SCREW (B1.7X6), TAPPING	
* 175	3-392-979-01	LEVER, REVERSE	
176	3-318-204-81	SCREW (M1.7X3), TAPPING	
177	3-590-768-00	RING (A), E	
178	3-701-437-11	POLY-SLIDER (A)	
* 179	3-375-381-01	BRACKET ASSY (X), CM	
180	3-392-963-01	SPRING (R)	
181	3-318-204-91	SCREW (M1.7X4), TAPPING	
182	3-375-376-01	MUTE (PWB)	
183	3-392-926-02	FLYWHEEL ASSY (BF)	
* 184	3-392-974-01	CHASSIS ASSY, MAIN	
* 185	3-392-925-01	ARM (A) ASSY, F.R	
* 186	3-392-939-01	ARM, FF	
* 187	3-392-934-01	ARM (B), F.R	
188	3-392-941-01	PULLEY (A), IDLE	
* 189	4-908-792-11	SCREW (B2)	
190	3-392-967-01	BELT, MAIN	
191	3-392-995-02	FLYWHEEL ASSY (BR)	
M701	X-3365-046-1	MOTOR ASSY (REEL/CAPSTAN)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	

CONTROL **MAIN**

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	1-659-479-11	CONTROL BOARD			
		**********			
*	3-909-885-01	PLATE, LIGHT GUIDE			
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-023-31	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL801	1-517-536-11	LAMP, PILOT			
PL802	1-517-536-11	LAMP, PILOT			
		< SWITCH >			
S801	1-572-704-31	SWITCH, KEY BOARD (LCL/A.MEM)			
S802	1-572-704-31	SWITCH, KEY BOARD (LOUD)			
S803	1-572-704-31	SWITCH, KEY BOARD (FM/AM)			
S804	1-572-704-31	SWITCH, KEY BOARD (1/□□)			
S805	1-572-704-31	SWITCH, KEY BOARD (2/MTL)			
S806	1-572-704-31	SWITCH, KEY BOARD (3/AMS)			
S807	1-572-704-31	SWITCH, KEY BOARD (4)			
S808	1-572-704-31	SWITCH, KEY BOARD (5)			
S809	1-572-704-31	SWITCH, KEY BOARD (6)			
**********					
*	A-3294-000-A	MAIN BOARD, COMPLETE			
		**********			
*	3-920-526-01	BRACKET (23P)			
	3-922-535-01	SCREW (+BTT)			
*	3-931-296-01	BRACKET (CONNECTOR)			
		< CAPACITOR >			
C101	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C102	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C103	1-124-464-11	ELECT	0.22uF	20%	50V
C104	1-126-160-11	ELECT	1uF	20%	50V
C105	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C111	1-124-584-00	ELECT	100uF	20%	10V
C112	1-124-465-00	ELECT	0.47uF	20%	50V
C113	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C114	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C115	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C116	1-124-464-11	ELECT	0.22uF	20%	50V
C117	1-162-587-11	CERAMIC CHIP	0.039uF	10%	25V
C118	1-126-157-11	ELECT	10uF	20%	16V
C119	1-126-961-11	ELECT	2.2uF	20%	50V
C121	1-126-157-11	ELECT	10uF	20%	16V
C122	1-126-157-11	ELECT	10uF	20%	16V
C123	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C124	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C125	1-124-472-11	ELECT	470uF	20%	10V
C126	1-124-257-00	ELECT	2.2uF	20%	50V
C127	1-124-257-00	ELECT	2.2uF	20%	50V
C128	1-126-157-11	ELECT	10uF	20%	16V
C129	1-126-157-11	ELECT	10uF	20%	16V
C130	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C131	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C151	1-126-157-11	ELECT	10uF	20%	16V
C152	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C153	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C154	1-124-234-00	ELECT	22uF	20%	16V
C156	1-126-944-11	ELECT	3300uF	20%	16V
C157	1-136-173-00	FILM	0.47uF	5%	50V
C181	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C182	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C201	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C202	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C203	1-124-464-11	ELECT	0.22uF	20%	50V
C204	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C205	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C212	1-124-902-00	ELECT	0.47uF	20%	50V
C213	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C214	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C215	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C216	1-124-464-11	ELECT	0.22uF	20%	50V
C217	1-162-587-11	CERAMIC CHIP	0.039uF	10%	25V
C220	1-126-961-11	ELECT	2.2uF	20%	50V
C221	1-126-157-11	ELECT	10uF	20%	16V
C222	1-126-157-11	ELECT	10uF	20%	16V
C223	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C224	1-163-245-11	CERAMIC CHIP	56PF	5%	50V

Ref. No.	Part No.	Description			Remark
C226	1-124-257-00	ELECT	2. 2uF	20%	50V
C227	1-124-257-00	ELECT	2. 2uF	20%	50V
C228	1-126-157-11	ELECT	10uF	20%	16V
C229	1-126-157-11	ELECT	10uF	20%	16V
C230	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V
C231	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V
C263	1-164-232-11	CERAMIC CHIP	0. 01uF		50V
C281	1-164-004-11	CERAMIC CHIP	0. 1uF	10%	25V
C282	1-163-022-00	CERAMIC CHIP	0. 012uF	10%	50V
C304	1-126-163-11	ELECT	4. 7uF	20%	50V
C305	1-163-037-11	CERAMIC CHIP	0. 022uF	10%	25V
C306	1-163-037-11	CERAMIC CHIP	0. 022uF	10%	25V
C307	1-126-163-11	ELECT	4. 7uF	20%	50V
C309	1-163-809-11	CERAMIC CHIP	0. 047uF	10%	25V
C310	1-126-163-11	ELECT	4. 7uF	20%	50V
C311	1-126-157-11	ELECT	10uF	20%	16V
C313	1-126-157-11	ELECT	10uF	20%	16V
C314	1-163-037-11	CERAMIC CHIP	0. 022uF	10%	25V
C315	1-124-584-00	ELECT	100uF	20%	10V
C316	1-104-664-11	ELECT	47uF	20%	10V
C350	1-126-934-11	ELECT	220uF	20%	16V
C351	1-126-942-61	ELECT	1000uF	20%	16V
C380	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C381	1-163-986-00	CERAMIC CHIP	0. 027uF	10%	25V
C385	1-126-160-11	ELECT	1uF	20%	50V
C401	1-124-257-00	ELECT	2. 2uF	20%	50V
C402	1-164-232-11	CERAMIC CHIP	0. 01uF		50V
C403	1-163-037-11	CERAMIC CHIP	0. 022uF	10%	25V
C404	1-131-344-00	TANTALUM	0. 33uF	10%	35V
C405	1-124-465-00	ELECT	0. 47uF	20%	50V
C406	1-126-157-11	ELECT	10uF	20%	16V
C407	1-124-257-00	ELECT	2. 2uF	20%	50V
C408	1-124-234-00	ELECT	22uF	20%	16V
C409	1-163-017-00	CERAMIC CHIP	0. 0047uF	5%	50V
C503	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C553	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C705	1-164-232-11	CERAMIC CHIP	0. 01uF		50V
C706	1-126-157-11	ELECT	10uF	20%	16V
C707	1-124-471-00	ELECT	1000uF	20%	6. 3V
C708	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C709	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C710	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V
C711	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V
C715	1-126-163-11	ELECT	4. 7uF	20%	50V
C716	1-164-232-11	CERAMIC CHIP	0. 01uF		50V
C721	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C722-724	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V
C728	1-126-163-11	ELECT	4. 7uF	20%	50V

Ref. No.	Part No.	Description			Remark
C802	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C901	1-164-004-11	CERAMIC CHIP	0. 1uF	10%	25V
C918	1-164-232-11	CERAMIC CHIP	0. 01uF		50V
C998	1-124-443-00	ELECT	100uF	20%	10V
C999	1-164-004-11	CERAMIC CHIP	0. 1uF	10%	25V

< JACK >

CNJ903 1-565-319-71 JACK, PIN 2P (LINE OUT)

< CONNECTOR >

* CNP10 1-506-995-11 PIN, CONNECTOR (PC BOARD) 13P
CNP801 1-774-951-11 PIN, CONNECTOR 12P
* CNP901 1-506-985-11 PIN, CONNECTOR (PC BOARD) 3P

< DIODE >

D111	8-719-991-33	DIODE	1SS133T-77
D151	8-719-049-38	DIODE	1N5404TU
D351	8-719-109-69	DIODE	RD3. 6ES-B2
D352	8-719-991-33	DIODE	1SS133T-77
D353	8-719-991-33	DIODE	1SS133T-77
D354	8-719-991-33	DIODE	1SS133T-77
D355	8-719-991-33	DIODE	1SS133T-77
D356	8-719-991-33	DIODE	1SS133T-77
D357	8-719-991-33	DIODE	1SS133T-77
D358	8-719-991-33	DIODE	1SS133T-77
D359	8-719-110-13	DIODE	RD9. 1ESB2
D380	8-719-991-33	DIODE	1SS133T-77
D401	8-719-970-02	DIODE	1SR139-400
D501	8-719-991-33	DIODE	1SS133T-77
D704	8-719-991-33	DIODE	1SS133T-77
D705	8-719-109-89	DIODE	RD5. 6ESB2
D706	8-719-991-33	DIODE	1SS133T-77
D707	8-719-991-33	DIODE	1SS133T-77
D708	8-719-991-33	DIODE	1SS133T-77
D709	8-719-991-33	DIODE	1SS133T-77
D710	8-719-991-33	DIODE	1SS133T-77
D711	8-719-991-33	DIODE	1SS133T-77
D712	8-719-991-33	DIODE	1SS133T-77
D713	8-719-991-33	DIODE	1SS133T-77
D714	8-719-991-33	DIODE	1SS133T-77
D718	8-719-109-89	DIODE	RD5. 6ESB2
D901	8-719-970-02	DIODE	1SR139-400
D902	8-719-970-02	DIODE	1SR139-400
D933	8-719-970-02	DIODE	1SR139-400
D991	8-719-970-02	DIODE	1SR139-400
D992	8-719-970-02	DIODE	1SR139-400
D999	8-719-970-02	DIODE	1SR139-400

MAIN

Ref. No.	Part No.	Description	Remark
		< IC >	
IC101	8-759-369-42	IC HA13153	
IC250	8-759-161-01	IC HA12164	
IC321	8-759-106-02	IC uPC4570G2	
IC401	8-759-800-71	IC LA2010	
IC421	8-759-106-02	IC uPC4570G2	
IC701	8-759-163-42	IC uPD1708AG-336-00	
		< JACK >	
J1	1-774-912-11	JACK (ANTENNA)	
		< JUMPER RESISTOR >	
JR210	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR211	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR212	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR213	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR214	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR215-217	1-216-295-00	CONDUCTOR, CHIP (2012)	
		< COIL >	
L901	1-411-823-11	COIL, CHOKE	
		< TRANSISTOR >	
Q112	8-729-920-21	TRANSISTOR DTC314TKH04	
Q113	8-729-920-21	TRANSISTOR DTC314TKH04	
Q202	8-729-920-21	TRANSISTOR DTC314TKH04	
Q203	8-729-920-21	TRANSISTOR DTC314TKH04	
Q310	8-729-016-79	TRANSISTOR 2SC2412KLN-T146-E	
Q311	8-729-016-79	TRANSISTOR 2SC2412KLN-T146-E	
Q321	8-729-903-30	TRANSISTOR DTC144TK	
Q322	8-729-903-30	TRANSISTOR DTC144TK	
Q352	8-729-901-00	TRANSISTOR DTC124EK	
Q353	8-729-216-22	TRANSISTOR 2SA1162-G	
Q354	8-729-209-15	TRANSISTOR 2SD2012	
Q355	8-729-901-00	TRANSISTOR DTC124EK	
Q356	8-729-111-52	TRANSISTOR 2SB984-K	
Q359	8-729-901-00	TRANSISTOR DTC124EK	
Q380	8-729-901-00	TRANSISTOR DTC124EK	
Q381	8-729-920-21	TRANSISTOR DTC314TKH04	
Q402	8-729-902-99	TRANSISTOR DTC114TK	
Q411	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
Q412	8-729-900-61	TRANSISTOR DTA114ES	
Q413	8-729-901-04	TRANSISTOR DTA114EK	
Q414	8-729-901-00	TRANSISTOR DTC124EK	
Q452	8-729-902-99	TRANSISTOR DTC114TK	
Q705	8-729-967-32	TRANSISTOR 2SC2673-Q	
Q920	8-729-902-99	TRANSISTOR DTC114TK	
		< RESISTOR >	
R101	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R103	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R104	1-216-076-00	METAL CHIP 13K 5% 1/10W	
R105	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R108	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R109	1-249-439-11	CARBON 68K 5% 1/4W	
R110	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R111	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R112	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R113	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R114	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R115	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R116	1-247-882-11	CARBON 130K 5% 1/4W	
R119	1-249-411-11	CARBON 330 5% 1/4W	
R120	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R121	1-216-037-00	METAL CHIP 330 5% 1/10W	
R122	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R123	1-249-425-11	CARBON 4.7K 5% 1/4W	
R124	1-249-425-11	CARBON 4.7K 5% 1/4W	
R126	1-249-435-11	CARBON 33K 5% 1/4W	
R128	1-249-435-11	CARBON 33K 5% 1/4W	
R129	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R130	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R131	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R132	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R133	1-249-429-11	CARBON 10K 5% 1/4W	
R134	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R135	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R136	1-249-429-11	CARBON 10K 5% 1/4W	
R181	1-216-045-00	METAL CHIP 680 5% 1/10W	
R182	1-216-069-11	METAL CHIP 6.8K 5% 1/10W	
R201	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R203	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R204	1-216-076-00	METAL CHIP 13K 5% 1/10W	
R205	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R208	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R209	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R210	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R211	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R212	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R213	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R214	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R217	1-247-882-11	CARBON 130K 5% 1/4W	
R218	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R219	1-216-037-00	METAL CHIP 330 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R220	1-216-085-00	METAL CHIP	33K	5%	1/10W
R221	1-216-037-00	METAL CHIP	330	5%	1/10W
R222	1-216-085-00	METAL CHIP	33K	5%	1/10W
R223	1-249-425-11	CARBON	4.7K	5%	1/4W
R224	1-249-425-11	CARBON	4.7K	5%	1/4W
R226	1-249-435-11	CARBON	33K	5%	1/4W
R228	1-249-435-11	CARBON	33K	5%	1/4W
R229	1-216-073-00	METAL CHIP	10K	5%	1/10W
R230	1-216-073-00	METAL CHIP	10K	5%	1/10W
R231	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R232	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R233	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R234	1-216-075-00	METAL CHIP	12K	5%	1/10W
R235	1-216-075-00	METAL CHIP	12K	5%	1/10W
R236	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R251	1-216-073-00	METAL CHIP	10K	5%	1/10W
R252	1-216-073-00	METAL CHIP	10K	5%	1/10W
R254	1-249-428-11	CARBON	8.2K	5%	1/4W
R255	1-216-220-00	METAL CHIP	8.2K	5%	1/8W
R256	1-216-079-00	METAL CHIP	18K	5%	1/10W
R258-262	1-216-073-00	METAL CHIP	10K	5%	1/10W
R281	1-216-045-00	METAL CHIP	680	5%	1/10W
R282	1-216-069-11	METAL CHIP	6.8K	5%	1/10W
R301	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R302	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R306	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R307	1-249-421-11	CARBON	2.2K	5%	1/4W
R309	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R310	1-216-029-00	METAL CHIP	150	5%	1/10W
R311	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R312	1-216-079-00	METAL CHIP	18K	5%	1/10W
R313	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R314	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R315	1-247-863-11	CARBON	22K	5%	1/4W
R316	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R317	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R319	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R320	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R321	1-247-867-11	CARBON	33K	5%	1/4W
R322	1-247-867-11	CARBON	33K	5%	1/4W
R323	1-216-081-00	METAL CHIP	22K	5%	1/10W
R324	1-249-417-11	CARBON	1K	5%	1/4W
R325	1-216-091-00	METAL CHIP	56K	5%	1/10W
R350	1-247-778-00	CARBON	6.2	5%	1/4W
R351	1-247-778-00	CARBON	6.2	5%	1/4W
R372-374	1-249-393-11	CARBON	10	5%	1/4W

Ref. No.	Part No.	Description			Remark
R377	1-216-073-00	METAL CHIP	10K	5%	1/10W
R380	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R381	1-249-437-11	CARBON	47K	5%	1/4W
R382	1-216-073-00	METAL CHIP	10K	5%	1/10W
R385	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R386	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R387	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R401	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R402	1-216-046-00	METAL CHIP	750	5%	1/10W
R403	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R405	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R406	1-216-025-00	METAL GLAZE	100	5%	1/10W
R411	1-249-425-11	CARBON	4.7K	5%	1/4W
R412	1-249-438-11	CARBON	56K	5%	1/4W
R591	1-249-393-11	CARBON	10	5%	1/4W
R706	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R707	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R708	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R710-714	1-249-437-11	CARBON	47K	5%	1/4W
R715	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R723	1-249-409-11	CARBON	220	5%	1/4W
R724	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R725	1-249-441-11	CARBON	100K	5%	1/4W
R726	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R727	1-247-891-00	CARBON	330K	5%	1/4W
R728	1-249-421-11	CARBON	2.2K	5%	1/4W
R733	1-249-409-11	CARBON	220	5%	1/4W

< VARIABLE RESISTOR >

RV101	1-225-212-21	RES, ADJ, CARBON 1K
RV201	1-225-212-21	RES, ADJ, CARBON 1K
RV401	1-225-194-11	RES, VAR (WITH SWITCH) (FADER, POWER OFF/ VOLUME/PUSH TREBLE/PULL BASS)
RV402	1-241-680-11	RES, VAR, CARBON 100K (SW) (BALANCE, TUNING/PUSH SEEK/PULL DISPLAY)

< TUNER >

TU1	A-3309-002-A	TUNER UNIT

< FLAT CABLE >

W801	1-751-021-21	CABLE, FLAT (28 CORE)
W802	1-769-356-11	CABLE, FLAT 9P

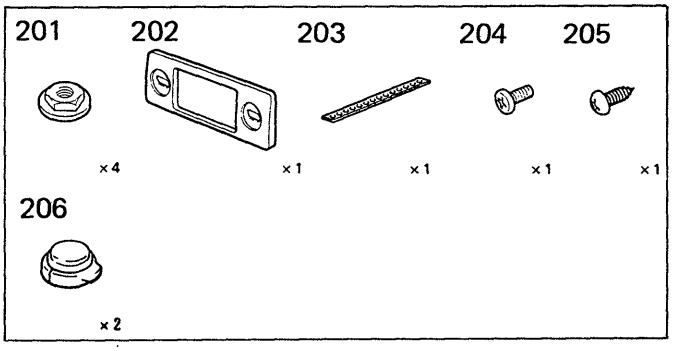
< VIBRATOR >

X701	1-760-223-11	VIBRATOR, CRYSTAL (4.5MHz)

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
6	1-776-855-11	CORD (WITH CONNECTOR)	
F901	1-532-798-11	FUSE (BLADE TYPE) (AUTO FUSE) 1A	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
M701	X-3365-046-1	MOTOR ASSY (REEL/CAPSTAN)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	
SOL701	1-454-464-12	SOLENOID, PLUNGER	
**********			
		ACCESSORIES & PACKING MATERIALS	
		******************************	
	3-810-599-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-810-599-21	MANUAL, INSTRUCTION (FRENCH) (Canadian)	
	3-810-600-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH)	
**********			
		************************	
		HARDWARE LIST	
		************************	
#1	7-621-770-87	SCREW +PTT 2.6X5 (S)	
#2	7-621-770-67	SCREW +PTT 2.6X6 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#5	7-621-255-25	SCREW +PTT 2X4 (S)	
#6	7-627-553-88	SCREW, PRECISION +P 2X7	
#7	7-624-102-04	STOP RING 1.5, TYPE -E	
#8	7-624-104-04	STOP RING 2.0, TYPE -E	
#9	7-624-118-01	RING, RETAINING E-2.5	
#10	7-627-553-48	SCREW, PRECISION +P 2X4	
#11	7-621-255-15	SCREW +P 2X3	
#12	7-621-591-00	SCREW +K 2X4	
#13	7-621-555-10	SCREW +K 2X3	
#14	7-621-255-40	SCREW +P 2X6	
**********			

Ref. No.	Part No.	Description	Remark
		MOUNTING HARDWARE	
		**********	
201	3-575-039-02	NUT (VOL)	
202	3-383-094-51	PLATE, TRIM	
203	3-916-012-01	BRACKET (ND), FITTING ASSIST	
204	3-915-917-01	SCREW (4X12), +T	
205	7-682-560-04	SCREW +P 4X6	
206	X-3363-799-1	KNOB (A) ASSY	



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